

SECTOR 2

FRANCE—BAY OF BISCAY—LA LOIRE TO POINTE DE LA COUBRE

Plan.—This sector describes the W coast of France from the Estuary of the La Loire, including St. Nazaire and Nantes, to Pointe de la Coubre, 110 miles SSE. The description is from the N to S, including the offshore islands and dangers.

La Loire Estuary

2.1 The Estuary of La Loire comprises the area fronting the mainland between Pointe du Croisic and Ile du Pilier (47°03'N., 2°21'W.). It is roughly divided into two parts by Plateau de la Banche, a dangerous shoal area, and can be entered from the S by Chenal du Sud or from the N by Chenal du Nord; the latter is generally only used by small vessels with local knowledge.

2.2 North side.—Baie du Pouliguen (47°16'N., 2°23'W.), a shallow bay, lies on the N side of the estuary. It is entered between Pointe de Penchateau, located 5.6 miles ESE of Pointe du Croisic, and Pointe de Chemoulin, 5 miles ESE.

Basse Lovre, a rocky shoal, lies 0.7 mile off the mainland shore, 3.2 miles WNW of Pointe de Penchateau. It has a least depth of 1m and is marked by a buoy. A prominent church stands at Batz-sur-Mer, 2.7 miles WNW of Pointe de Penchateau; a conspicuous water tower stands at Kermoisan, 1 mile E of it.

La Baule, a large coastal resort, occupies the N shore of the bay. Le Pouliguen, a small harbor mainly used by yachts, is situated on the W side of the bay, 1 mile N of Pointe de Penchateau. It is entered through a channel marked by beacons and fronted by a bar which dries at LW. Pornichet, an extensive yacht marina, is situated on the E side of the bay, 2.4 miles WNW of Pointe de Chemoulin. It is protected by breakwaters and connected to the shore by a bridge, 250m long.

The bay is fronted by a chain of reefs and drying shoals which extend 5 miles ESE from Pointe de Penchateau. It may be entered by several narrow channels which lead through the reefs, but local knowledge is recommended.

Pointe de Chemoulin (47°14'N., 2°18'W.) is the NW entrance point of the La Loire. A conspicuous coastguard station stands on its extremity. A conspicuous television mast, 80m high, stands 2 miles NE of the point; a prominent water tower, 44m high, stands close S of it.

Le Grand Charpentier, a rocky reef, lies 1.5 miles SW of Pointe de Chemoulin at the outer edge of the dangers fronting Baie du Pouliguen. A main light is shown from a conspicuous tower, 27m high, with a helicopter platform, standing on this reef.

2.3 South side.—Pointe de St. Gildas (47°08'N., 2°15'W.), fringed by reefs, is the SE entrance point of La Loire. A main light is shown from a framework tower with a dwelling, 17m high, standing on the point.

Ile du Pilier (47°03'N., 2°22'W.) is located 7 miles SW of Pointe de St. Gildas. A main light is shown from a conspicuous

square tower, 34m high, standing in the N part of the island. A prominent disused light tower and a conspicuous disused signal station, consisting of a white house with a red roof, stand close to it.

Les Chevaux, a group of rocky patches and shoals, extend up to 2.5 miles WNW of this island and are marked by a lighted buoy.

Caution.—Chaussee de Boeufs (46°56'N., 2°26'W.), a chain of reefs and shoals, extends up to about 8 miles SW of Ile du Pilier and is marked by buoys. This chain is reported to be very dangerous because of the tidal currents which set down on it and the general level of poor visibility found in this vicinity.

Plateau de la Banche, an extensive rocky bank, lies centered 10 miles NW of Ile du Pilier. It dries in places and is marked by buoys moored near the outer edges. A main light is shown from a prominent tower, 30m high, standing in the SW part of the bank. This bank is reported to be especially dangerous in SW gales, when vessels may be driven on to it.

2.4 Plateau de la Lambarde, a rocky shoal bank, lies centered 4 miles E of Plateau de la Banche Light. Parts of this shoal bank are awash at LW; it is marked by buoys.

Basse Michard, a rocky shoal with a least depth of 8.1m, lies 3.3 miles WNW of the N end of Plateau de la Banche. Basse de l'Astrolabe, an isolated rocky shoal with a least depth of 8.7m, lies 2.8 miles SSE of Basse Michard.

Banc de Guerande (47°11'N., 2°40'W.) is described with Baie de Quiberon in paragraph 1.31.

La Couronne, an extensive drying reef, lies centered 2.6 miles WSW of Pointe de St. Gildas. A lighted buoy, equipped with a racon, is moored close NW of its NW extremity.

Caution.—Numerous wrecks, some dangerous, lie in the estuary and the approaches to the river and may best be seen on the chart.

Numerous fishing vessels may be encountered within the estuary and the approaches to the river.

Fishing, regulated dumping, and sand removal areas, the limits of which are shown on the chart, lie in the estuary and approaches to the river.

La Loire

2.5 La Loire, one of the principal rivers in France, is about 600 miles long, but is available to ocean-going vessels only as far as Nantes, 30 miles above the mouth. It is entered between Pointe de St. Gildas and Pointe de Chemoulin, about 6.5 miles NNW. The river then narrows to a width of about 1 mile abreast of Saint Nazaire, which lies on the N bank, about 5 miles above the entrance.

That section of the river lying between Saint Nazaire and Nantes is known as La Loire Maritime; the ports of Montoir, Donges, Paimboeuf, Cordemais, Basse-Indre, Haut-Indre, and Coueron stand along its banks.

Port du Boucau (St. Gildas), La Gravette, Port de Comberge, and Le Pointeau are small shallow harbors lying along the E bank of the river within 7 miles of Point de St. Gildas. They are protected by breakwaters and used by fishing boats and yachts.

Winds—Weather.—At Saint Nazaire, winds predominate from the SW and W for a good part of the year. Winds from the N are fairly common in the summer; gales occur frequently in the winter months.

Fog is most frequent from September to December within the river, but sea fog predominates from May to October and is also common in April and May in the estuary.

Temperatures are generally mild, ranging from 33°C in the summer to -6°C in winter. Ice is not a problem.

Tides—Currents.—Tides at the entrance to the river rise about 5.3m at springs and 3.9m at neaps.

Tidal currents in the outer approaches to the river are comparatively weak and rotate clockwise. When the tide at Brest is rising, they generally set NE towards the off-lying dangers in the estuary. Closer to the river entrance, the tidal currents become rectilinear and increase in velocity, attaining maximum rates up to 4 knots at springs off Saint Nazaire.

Depths—Limitations.—Vessels up to 350m in length and 16.1m draft can enter the river and reach the facilities at Donges.

Chenal du Sud, the main approach channel, is entered about 13 miles WSW of Ile du Pilier. It leads ENE between Ile du Pilier and Plateau de la Banche, and then NE between Plateau de la Lambarde and Pointe de St. Gildas.

Passe des Charpentiers, 300m wide, leads NNE from the inner end of Chenal du Sud and across the bar at the entrance to the river. It is about 4 miles long and maintained to a depth of 13.2m.

Chenal de Bonne-Anse, leads NE for 2.5 miles from the inner end of Passe des Charpentiers to the roadstead of Saint Nazaire. Its outer and inner parts are maintained at dredged depths of 13.2 and 12.4m, respectively.

Chenal du Nord, the secondary approach channel, leads ESE for about 15 miles to the entrance of Passe des Charpentiers. It passes between the mainland on the N side of the estuary and Plateau de la Banche, and then between Le Grand Charpentier and Plateau de la Lambarde. This channel has least depths of 4.2 to 6.6m and, although fairly easy to navigate in good weather, is generally only used by small vessels with local knowledge.

Aspect.—Chenal du Sud is marked by lighted buoys; its seaward entrance is marked by SN1 Lighted Buoy (47°00'N., 2°40'W.), which is equipped with a racon and moored about 13 miles WSW of Ile du Pilier.

Passe des Charpentiers and Chenal de Bonne-Anse are marked by lighted buoys. The former channel is also indicated by a lighted range which may best be seen on the chart.

In addition to those described with the approaches to the estuary, the following marks are also prominent:

1. A suspension bridge, with a vertical clearance of 54m, which spans the river close above Saint Nazaire
2. A light tower, 19m high, standing on Pointe de l'Aigillon, 1.5 miles ENE of Pointe de Chemoulin
3. Tour du Commerce, a white tower, standing 1.1 miles NE of Pointe de l'Aigillon

4. A disused light tower, 26m high, standing above the surrounding trees, 0.2 mile NE of the Tour du Commerce.

Pilotage.—Pilotage is compulsory for all vessels over 75m in length and for vessels of more than 150 nrt carrying oil products, gas or dangerous cargo.

Vessels should send an ETA message through Saint Nazaire (FFO) 18 hours in advance; any amendments to this ETA of more than 2 hours should be sent at least 4 hours in advance. Vessels should then contact the pilot station 4 hours before arrival on VHF channel 16.

Pilots generally board at a position in Chenal du Sud, about 4.5 miles WSW of Pointe de St. Gildas. Vessels from the N may request the pilot to board in a position ESE of Le Grand Charpentier.

A Vessel Traffic Service System (VTS) has been established in the approaches to the river and is mandatory for all commercial vessels.

Inbound vessels should send a report to the VTS Control Center 48 hours before arrival. They should then contact the Saint Nazaire VTS Port Control Center on VHF channel 12, when entering the estuary. While transiting the area, vessels must maintain a listening watch on VHF channel 12.

Regulations.—A Mandatory Access Channel, the limits of which are shown on the chart, lies in Chenal du Sud and leads to the river entrance. A Waiting Area, the limits of which are shown on the chart, lies on the N side of the approach channel, 6 miles W of Pointe de St. Gildas.

All vessels over 1,600 grt and carrying hydrocarbons or dangerous cargo must report their entry into this channel or the waiting area and maintain a listening watch on VHF channel 16.

Anchorage.—Vessels waiting to enter the river may obtain anchorage, in depths of 11 to 13m, close E of Plateau de Lambarde and S of Le Grand Charpentier.

Vessels may also anchor, in depths of 19 to 28m, good holding ground, within the Waiting Area situated SSW of Plateau de Lambarde. Vessels not obliged to do so should obtain permission from the authorities prior to entering this designated area.

Caution.—Information concerning the dredged depths in the fairways should be requested from the local authorities, due to continual silting in the river. Water level reports are broadcast for the river between Saint Nazaire and Nantes.

Ferries cross the river at several points, which are indicated on the chart, and may be contacted on VHF channel 12.

Submarine pipelines and cables cross the river and may best be seen on the chart.

Several power lines, with minimum vertical clearances of 47m, span La Loire Maritime.

A bridge, with a vertical clearance of 54m, crosses the river close above Saint Nazaire. Another bridge, with a vertical clearance of 50m, crosses the river at Nantes.

Several buoys, associated with dredging operations, may be moored in the approaches and in the river.

The ranges do not always indicate the deepest part of the fairway; due to silting, pilots sometimes use different reference aids.

Saint Nazaire (47°16'N., 2°12'W.)

World Port Index No. 36850

2.6 Saint Nazaire, an important commercial port and shipbuilding center, lies on the N bank of La Loire, 5 miles within the entrance. The main harbor, which was a former German submarine base, consists of an outer tidal basin and two inner wet dock basins entered through locks. Several shipbuilding ways and shipyards are situated on the N side of the river, close above the main harbor.

Tides—Currents.—Tides at Saint Nazaire rise about 5.5m at springs and 4.2m at neaps.

Off the port, the tidal currents run in the direction of the channel at normal rates of 2 to 3 knots. Rates up to 4 knots have been reported with some of the higher spring tides.

Depths—Limitations.—The entrance to the outer basin, formed by two moles, is 124m wide. This basin and entrance channel are dredged to a depth of 5.5m, but are subject to silting. A quay, situated along the inner side of the E mole, is dredged to a depth of 4.5m over a length of 210m.

Vessels enter the wet dock basins via a lock which is 211m long and 30m wide. Bassin de Saint Nazaire is situated N of the lock and has 1,744m of total quayage, with depths of 9m alongside. Penhoet Basin, situated N of Saint Nazaire Basin, is entered through a passage, 34m wide, spanned by a swing bridge. It has 2,262m of total quayage, with depths of 9m alongside. Small craft and yachts up to 50m in length can enter the wet dock basins through a small lock, 53m long and 13m wide. There are facilities for fishing, general cargo, tanker, bulk, reefer, and ro-ro vessels. Vessels up to 185m in length, 28.5 beam, and 8.5m draft can be accommodated within the wet dock basins.

There are also extensive repair facilities. Joubert Dry Dock, the largest in the port, is situated at the SE corner of Penhoet Basin. It is 350m long, 50m wide, and has depths on the sill of 8m at LWS and 13.5m at HWS. This dock can also be used as a lock and can handle vessels up to 250,000 dwt.

Pilotage.—See La Loire in paragraph 2.5 for information concerning pilotage, traffic control, and regulations.

Anchorage.—Grande Rade provides good anchorage off St. Nazaire, in depths of 11 to 14.6m, sand and mud. Anchorage is also available in Petite Rade, E of the harbor, in depths of 7 to 9m, mud.

Large vessels are advised to arrive at Grande Rade just prior to HW and enter the basins without anchoring.

Caution.—The tidal currents frequently set across the entrance to the outer basin and the best time to enter is at SW after HW or after LW, if the draft is suitable.

2.7 Montoir (47°18'N., 2°08'W.), an industrial port, lies on the N side of La Loire Maritime, between 1.5 and 3 miles above Saint Nazaire.

Depths—Limitations.—The fairway leading to Montoir is dredged to a depth of 13.2m. Deep-draft vessels can be accommodated alongside the river terminals but may only berth at HWS.

The main facilities, described from W to E, include the following:

1. A ro-ro berth, which can accommodate vessels up to 180m long.

2. A ro-ro berth, 130m long, with a dredged depth of 7.5m alongside, which can handle vessels up to 140m in length.

3. A container quay, 610m long, with a dredged depth of 11m alongside, which can handle vessels up to 12m draft.

4. An LNG terminal formed by two berths with dredged depths of 12m alongside. It can handle vessels up to 60,000 dwt, 280m in length, and 13m draft.

5. A bulk terminal formed by a quay, 819m long, with a dredged depth of 12.5m alongside. It can handle vessels up to 140,000 dwt, 280m in length, and 13.5m draft.

6. A liquid chemical berth, 220m long, with a depth of 10m alongside, which can handle vessels up to 40,000 dwt, with a maximum draft of 13.5m.

7. A coal terminal formed by a berth, 248m long, with a dredged depth of 16m alongside. It can handle vessels up to 140,000 dwt, 300m in length, and 16m draft.

Pilotage.—See La Loire in paragraph 2.5 for information concerning pilotage, traffic control, and regulations.

2.8 Donges (47°18'N., 2°04'W.) (World Port Index No. 36860), a major oil and LPG port is situated on the N bank of La Loire 5 miles above St. Nazaire, is fronted by a large refinery.

Tides—Currents.—Tides rise about 5.6m at springs and 4.3m at neaps.

Depths—Limitations.—The fairway leading to the port is dredged to a depth of 13.2m.

The port, consisting of six main berths, can handle fully-loaded tankers up to 120,000 dwt and partially-loaded tankers up to 300,000 dwt. Generally, vessels up to 350m in length and 16m draft can be accommodated alongside.

Pilotage.—See La Loire in paragraph 2.5 for information concerning pilotage, traffic control, and regulations.

2.9 La Loire Maritime, extending above Saint Nazaire, also consists of several private industrial quays. These are situated at Le Carnet, 2.5 miles above Donges on the S bank, and Coueron, Basse-Indre, and Haut-Indre which lie 15, 17, and 19 miles, respectively, above Donges on the N bank. These quays can handle vessels up to 7m draft depending upon the state of the tide.

A power station fuel pier is situated on the N bank at Cordemais, 7.5 miles above Donges. It can handle vessels up to 30,000 dwt and 9m draft.

A quay, 140m long, is situated at Indret on the S bank, opposite Basse-Indre. It is used by naval vessels up to 6m draft.

A quay at Paimboeuf, on the S side of the river above Donges, can accommodate a chemical tanker with a maximum length of 160m and a maximum draft of 7.1m.

2.10 Nantes (47°13'N., 1°33'W.) (World Port Index No. 36900), an important commercial port, is located along both sides of La Loire, about 30 miles above Saint Nazaire. The river here is divided into two branches by Ile de St. Anne; the N branch is known as Bras de la Madeleine and the S branch as Bras de Pirmil. A lock connects the port to the Nantes-Brest Canal and the inland waterway system.

Tides—Currents.—Tides rise about 6m at springs and 4.6m at neaps.

The tidal currents at the port vary with the height of the river. When it is low, the flood currents attain rates up to 2.5 knots, but when the river is high, the currents are imperceptible. The rates of the ebb currents vary from 2 to 4 knots depending again on the height of the river.

Depths—Limitations.—The fairway in the river between Donges and Nantes has dredged depths of 8.3 to 4.6m, but is subject to silting.

The main commercial facilities include the following:

1. Quai de l'Arquillon, 398m long, has a depth of 4m alongside and is used by passenger vessels.
2. Quai de Roche Maurice, 747m long, has depths of 5.1 to 9.1m alongside and is used by bulk vessels.
3. Quai Wilson, 1,472m long, has depths of 5.6 to 7.1m alongside and is used by reefer, bulk, and container vessels.
4. Quai Chevre, 454m long, has depths of 7.6 to 9.6m alongside and is used by container and timber vessels.

In addition, there are seven private tanker and chemical berths, with 753m of total quayage and depths of 6 to 9.5m alongside.

Generally, vessels up to 225m in length can be handled, with drafts up to 9.5m at HWS and 8.5m at HWN.

Pilotage.—See La Loire for information concerning pilotage, traffic control, and regulations.

Baie de Bourgneuf

2.11 Baie de Bourgneuf (47°05'N., 2°15'W.) is entered between Pointe de St. Gildas and Pointe de l'Herbaudiere, the NW extremity of Ile de Noirmoutier, located 7 miles SSW. It is generally only frequented by small vessels with local knowledge proceeding to the small ports of Pornic and Noirmoutier.

The bay is well-protected from the N and E winds, with partial shelter from the S. Winds from the W, especially during the ebb tidal currents, can raise a heavy sea and make the entrance quite dangerous. Except in the N part, where there are steep cliffs, the coast is very low and bordered by rocks and sand banks. There are several good anchorages in the bay, but navigation is difficult due to the numerous shoals and mud banks which extend into it.

Ile de Noirmoutier (46°59'N., 2°14'W.), which forms the SW side of the bay, is low and separated at its S extremity from the mainland by Goulet de Fromantine, a narrow passage. This island is fronted on its N and W sides by numerous rocks and shoals.

Pointe de L'Herbaudiere (47°02'N., 2°18'W.), the NW extremity of the island, is low and bordered by drying flats and numerous rocks which extend up to 3 miles seaward. A prominent radio mast stands on the point; a conspicuous water tower stands 1.7 miles ESE of it.

Pointe de Devin is located 2 miles S of Pointe de L'Herbaudiere on the W side of Ile de Noirmoutier. It forms the N end of the SW coast of the island and is marked by a light. From this point, the shore trends SE and consists of low and barren sand dunes backed by inconspicuous salt pans. The shore between this point and Pointe de la Loire, 3 miles SE, is

fronted with rocks and drying flats which extend a considerable distance seaward.

Goulet de Fromantine, a narrow channel, leads between Pointe de la Fosse, the S extremity of Ile de Noirmoutier, and the mainland. It is used by small vessels with local knowledge including the ferry from Ile d'Yeu. A conspicuous water tower stands 0.9 mile NW of Pointe de la Fosse.

The channel is crossed by a conspicuous cantilever road bridge, with a vertical clearance of 24m, which has a navigable span 85m wide. Fromentine, a small town and resort, stands on the mainland at the S end of Baie de Bourgneuf. It has a small harbor which can be approached through Goulet de Fromantine. A sand bar extends across the N approaches to the channel, about 2.5 miles NNE of Pointe de la Fosse, and forms the controlling depth. The shallow passage through the bar dries 1m, but is subject to frequent changes. The tidal currents in the narrow channel off Pointe de la Fosse attain rates of 4 to 5 knots at times.

Caution.—An area, within which anchoring and fishing are prohibited, extends between Pointe de L'Herbaudiere and Ile du Pilier and may best be seen on the chart.

2.12 Pointe des Dames (47°01'N., 2°13'W.), the NE extremity of Ile de Noirmoutier, is located 3.5 miles ESE of Pointe de L'Herbaudiere. A main light is shown from a tower, 19m high, standing on the point. However, it is reported that only the top of this tower is generally visible above the surrounding trees. The N shore of the island between this point and Pointe de L'Herbaudiere is fronted by shoals, reefs, and foul ground that extend up to about 2.5 miles seaward.

Basse de Martroger, a drying reef, extends 1.1 miles seaward. A light is shown from a tower, 16m high, standing on the N end of this reef, 1.6 miles NE of Pointe de L'Herbaudiere.

Grand Sece, marked by a beacon, dries 2.1m and lies in the middle of a group of shoals, 1.5 miles NE of Ile de Pilier and 2.2 miles NNW of Pointe de L'Herbaudiere. Banc de la Blanche, with a least depth of 2.6m, lies 2.2 miles ENE of Grand Sece. It is located at the outer edge of the dangers and is marked by a buoy moored 0.5 mile N.

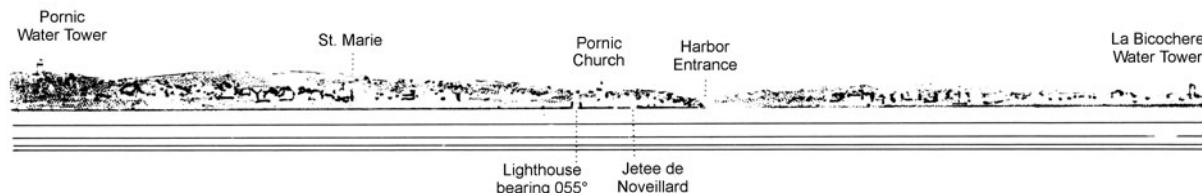
Basse des Peres, with a least depth of 2.6m, lies 3.5 miles E of Grand Sece and is marked by a buoy moored close SE. Pierre Moine, a drying reef, lies 2.7 miles NNE of Pointe des Dames and is marked by a light.

La Couronnee, a rocky shoal which dries, lies in the N part of the entrance to Baie de Bourgneuf, about 2.3 miles WSW of Pointe de St. Gildas. It is marked by a buoy and should be avoided even at HW, as the sea often breaks heavily on this danger.

Banc de Kerouars, which extends E for about 4 miles from La Couronnee, and has several shallow and dangerous patches on it.

Notre Dame, a drying rock marked by a beacon, lies 1.3 miles offshore, 5 miles SE of Pointe de St. Gildas. It is located at the NW extremity of a chain of drying and submerged reefs and shoals which extend into the bay.

Baie de Bourgneuf is bordered by extensive flats and may be entered through Chenal de la Pierre, the N channel, or Chenal du Centre, the S channel; however, local knowledge is required. Many areas outside of these entrance channels are obstructed by shell fish farms.



Approach to Pornic

2.13 Pornic (47°07'N., 2°06'W.), a small tidal harbor, lies at the head of an inlet on the NE shore of the bay. It is entered through a channel which dries and is marked by beacons and buoys. Tides within the inlet rise 5.4m at springs and 4m at neaps. The harbor is mainly used by small ferry vessels, pleasure craft, and fishing boats. An extensive yacht marina is situated close W of the entrance to the inlet. Vessels up to 50m in length can enter with drafts to 3.4m at HWS and 2.1m at HWN. The bottom is mud throughout, but in some places it only thinly covers a rocky layer and caution is required. Anchorage can be taken, in depths of 3 to 4.9m, sand and mud, off the inlet with local knowledge.

L'Herbaudiere (47°01'N., 2°18'W.), a small tidal harbor, is situated close E of Pointe de L'Herbaudiere and protected by breakwaters which form an entrance, 25m wide. A sand bar lies close N of the entrance and has a charted depth of 0.5m. The harbor is mainly used by fishing boats, which berth in a basin on the W side, and yachts, which berth in an extensive marina on the E side. Small vessels can enter at HW, with drafts up to 4m at springs and 3m at neaps; local knowledge is required.

Noirmoutier en l'Ile (47°00'N., 2°15'W.), a small drying harbor, lies 1.2 miles S of Pointe des Dames and is protected by a long jetty. It is formed by the meeting of three canals and is mainly used by fishing boats. Small craft can enter at HW with drafts up to 2.5m at springs and 1m at neaps.

Small tidal boat harbors are also situated at La Bernerie-en-Retz and Le Collet, on the E side of the bay, and at Port des Brochets, Port des Champs, Port de L'Epoids, and Port du Pont-Neuf, on the SE side of the bay.

Ile d'Yeu

2.14 Ile d'Yeu (46°43'N., 2°21'W.), located 12.5 miles SW of the S end of Ile de Noirmoutier, is a good landmark when approaching La Loire from the S.

There is no shelter in the vicinity of this island during NW gales; however, an area on its E side remains relatively calm because of the shallower depths in this vicinity.

The SW part of Ile d'Yeu is steep and attains a height of 30m, but the SE part is low and flat.

Pointe des Corbeau (46°41'N., 2°17'W.) is the E extremity of the island. A light is shown from a prominent tower, 19m high, standing on this point. Le Corbeau, a rock which dries, lies close E of this point and is marked by a beacon.

Port de la Meule, a very small drying harbor, is located on the S coast of the island, 2.5 miles W of Pointe des Corbeau. It lies at the head of a narrow inlet and is used by fishing boats. A light is shown from a tower, 6m high, standing at the W side of the entrance to the inlet. A conspicuous coastguard station is

situated 0.6 mile E of the harbor and a prominent radio mast, 73m high, is reported to stand near it.

Ile d'Yeu Light (formerly Petite Foule) is shown from a prominent tower, 38m high, standing on a hill near the W end of the island.

Pointe du Butte (46°44'N., 2°24'W.), the W extremity of the island, is fronted by foul ground. Les Chiens Perrins, a group of low rocks, extends up to 0.7 mile seaward from the point and is marked by a light.

Port Joinville (46°48'N., 2°21'W.), a small harbor, is located on the N side of the island, 2 miles E of Pointe du Butte. It affords good shelter and is used by fishing vessels, yachts, small ferries, and coasters. The harbor consists of a marina, three main basins, and a small wet dock. The entrance channel, which is indicated by a range, is dredged to a depth of 1.5m; there are depths of 1.5m within the main basins. The wet dock, which is entered through a gate, is maintained at a depth of 3.7m. The harbor is accessible to small vessels with drafts up to 6m at HWS and 4.5m at HWN.

Small vessels, with local knowledge, can approach the harbor from the E by passing S of La Sablaire, a shoal marked by a buoy, or from W by keeping at least 1 mile offshore. In good weather, vessels can anchor, in depths of 6 to 8m, sand and gravel, off the entrance to the harbor. Passenger vessels may anchor in an area 0.4 mile ESE of the port entrance.

A large water tower, 50m high, stands 0.4 mile SW of the harbor. It is the most conspicuous object on the whole island and can be seen from a considerable distance.

Caution.—Winds from the NW to NE raise a considerable swell in the outer part of the harbor and render it unsafe.

A restricted area, the limits of which are shown on the chart, extends NE between the E part of Ile d'Yeu and the mainland. Due to the existence of submarine cables, anchoring, dredging, and trawling are prohibited within this area.

Numerous wrecks, some dangerous, lie in the vicinity of the island and may best be seen on the chart.

Drift-net fishing is carried out in the vicinity of the island.

Mainland Coast—Ile de Noirmoutier to Les Per-tuis

2.15 Pointe de Notre Dame de Monts (46°53'N., 2°09'W.), the S entrance point of Goulet de Fromantine, is low and sandy. The coast, extending S and then SE from the point, consists of a line of wooded sand dunes amongst which numerous villas and apartments are visible from seaward. It is fronted by an extensive shallow flat and affords no shelter from S or W winds. Basse de l'Aigle, a rocky shoal with a least depth of 2.9m, is located 5.7 miles SW of Pointe de Notre Dame de

Monts. It lies at the outer edge of the flat and is marked by a buoy, moored 1 mile SW.

Pont d'Yeu, a bank of rock and sand, extends SW between the mainland coast and Ile d'Yeu. It breaks during fresh NW winds and dries in its N part. A buoy is moored in a depth of 5.5m, about 5.5 miles NE of Port Joinville and marks the SW extremity of the shallower part of this bank. Vessels navigating between Ile d'Yeu and the mainland should pass to the W of this buoy.

Conspicuous water towers stand at La Grande Croix and St. Jean de Monts, located 4 and 7 miles SE, respectively, of Pointe de Notre Dame de Monts.

Pointe de Grosse Terre (46°42'N., 1°58'W.), located 14 miles SSE of Pointe de Notre Dame, consists of black rocky cliffs, 12 to 14m high. Dunes attaining the same height surround the point, and a light is shown from a prominent tower, 17m high, standing on it. A rocky ledge, which dries up to 5m, extends up to 0.4 mile S of the point and is marked by a lighted buoy. A conspicuous water tower stands 1 mile NNE of the light tower.

2.16 Saint Gilles Croix de Vie (46°42'N., 1°57'W.), a small harbor, lies at the mouth of a river, on the S side of Pointe de Grosse Terre. It is protected from seaward by Pointe de la Garene, a narrow sand strip, and a breakwater.

The harbor is approached from the SW and entered through a channel which is marked by buoys and indicated by a range. A bar, lying outside the entrance, has a depth of 0.5m and the tides here rise about 5.3m at springs and 4.2m at neaps. The harbor basins, which are used by yachts and fishing vessels, have depths of 1.5m and dry in places. Vessels up to 60m in length can enter, with drafts up to 5.5m at HWS and 3.5m at HWN; local knowledge is recommended. During good weather, vessels can anchor, in depths of 3 to 4m, sand and mud, off the entrance and in the shelter of Pointe de Grosse Terre; however, anchorage farther out is exposed to all but E winds.

Several prominent water towers stand E and S of the harbor.

Caution.—A restricted area, the limits of which are shown on the chart, extends up to 25 miles SW from shore in the vicinity of Pointe de Grosse Terre. Due to the existence of submarine cables, anchoring, dredging, and trawling are prohibited within this area.

Several wrecks, some dangerous, lie up to 10 miles offshore between Pointe de Grosse Terre and Pointe de l'Aiguille and may best be seen on the chart.

An explosives dumping area, with a radius of 0.5 mile, lies centered about 3 miles ENE of the E end of Ile d'Yeu.

2.17 Pointe de l'Aiguille (46°29'N., 1°48'W.), low and fringed by drying rocks, is located 14 miles SSE of Pointe de Grosse Terre. The coast between is fronted by sunken rocks which extend up to about 0.5 mile offshore.

A main light (L'Armandeche) is shown from a conspicuous tower, 39m high, standing on the point. A prominent fort and a disused signal station, consisting of a white house with tower, also stand on the point. A conspicuous water tower stands 0.4 mile NNE of the light.

Les Barges d'Olonne, consisting of a large group of shoals and drying rocks, extends up to 2 miles W of Pointe de

l'Aiguille. La Grande Barge, a reef which dries 4.5m, lies in the NW part of the group. A main light is shown from a conspicuous tower, 29m high, surmounted by a helicopter platform standing on this reef.

Petit Barge, a drying rock, lies in the SW part of the group and is marked by a lighted buoy. Basse Vermeuou, a rocky patch with a least depth of 7.4m, lies 3 miles WNW of Pointe de l'Aiguille and breaks in heavy weather.

During bad weather, the area inshore of Basse Vermeuou becomes a mass of breakers and should not be approached.

2.18 Les Sables d'Olonne (46°30'N., 1°48'W.) (World Port Index No. 36960), a small resort town and commercial port, is situated at the E side of Pointe de l'Aiguille. The harbor consists of an outer tidal basin, an inner wet basin, and a marina.

Tides—Currents.—Tides rise about 5.3m at springs and 4.2m at neaps.

The tidal currents in the approaches are weak and, even in the entrance generally, do not exceed 1 knot. When the flushing lock is open, the flood and ebb currents may attain rates of 1.5 and 2 knots, respectively.

Depths—Limitations.—The entrance channel is dredged to a depth of 1.5m and leads between the heads of the breakwaters which are 40m apart. An extensive yacht marina is situated in the N part of the harbor and the outer tidal basin has facilities for fishing vessels. The wet dock is entered through a gate, 17m wide. Generally, tanker, general cargo, and bulk vessels up to 110m in length and 16m beam can be handled, with drafts up to 6.3m at HWS and 4.5m at HWN.

Aspect.—The large buildings of the town are conspicuous from seaward. Vessels may approach the outer roadstead from the SSW or SE through two main channels which are indicated by ranges. An entrance channel then leads NNW from the roadstead and between the harbor breakwaters. Local small craft may also approach the roadstead from the SW through an inshore secondary channel.

Pilotage.—Pilotage is compulsory for vessels 50m and over in length and for vessels of more than 150 nrt carrying hydrocarbons, gas or dangerous cargo. Vessels should send an ETA message 18 hours in advance and contact the port 1 hour in advance on VHF channel 12 or 16. Amendments to the ETA of more than 2 hours should be sent 4 hours in advance. Pilots will usually board in the vicinity of the outer roadstead. During bad weather, they may board within the shelter of the breakwaters.

Regulations.—A Mandatory Access Channel, the limits of which are shown on the chart, lies in the SSW approach to the port. It is 300m wide and leads to a small Waiting Area situated close S of the harbor entrance.

All vessels over 1,600 grt and carrying hydrocarbons or dangerous cargo must report their entry into this channel or the waiting area and maintain a listening watch on VHF channel 16.

All other vessels intending to use the access channel should first establish a listening watch on VHF channel 16.

Anchorage.—Vessels can anchor, in depths of 9 to 12m, sand and mud, in the outer roadstead.

Caution.—Vessels without local knowledge and not obliged to take a pilot are still advised to do so.

2.19 Pointe du Grouin du Cou (46°21'N., 1°28'W.), formed by steep cliffs, is located 16 miles SE of Les Sables d'Olonne. The coast between is fronted by drying rocks and several shoals. A coastal bank, with depths of less than 5m, extends up to 2 miles offshore near the SE end of this part of the coast and, with winds from seaward, forms a line of breakers.

A main light is shown from a prominent tower, 16m high, standing on Pointe du Grouin du Cou.

Bourgenay and Jard-sur-Mer, two small yacht marinas, are situated 6 and 10.5 miles SE, respectively, of Les Sables d'Olonne. Their entrances are fronted by reefs; local knowledge is required.

Banc du Grouin du Cou, with depths of 7 to 12m, extends up to 8 miles W of Pointe du Grouin du Cou and heavy seas form on it during fresh NW winds with an outgoing current. It is reported that passing over this bank in bad weather is dangerous as the sea may break even when it appears smoother farther out.

Plateau de Rochebonne

2.20 Plateau de Rochebonne (46°10'N., 2°27'W.), an extensive rocky shoal, is located about 30 miles SW of Pointe d'Aiguille and is one of the most dangerous shoals lying off the W coast of France. The sea often breaks on it in bad weather and when approached from the W, it is reported to be very difficult to identify.

The shoal extends for about 7 miles in a NW-SE configuration and has a least depth of 3.3m at La Congree, its NW end. It is marked by four lighted buoys moored at the NW and SE ends and along the NE and SW sides.

Caution.—Caution is necessary when navigating in the vicinity of Plateau de Rochebonne as the shoals are steep-to on all sides and soundings in the approaches give no adequate advance warning.

During heavy weather, the lighted buoys marking this danger may not be identified, either visually or on radar, until vessels are within the shoal area. In addition, their positions should never be wholly relied upon, especially in or after gales. All vessels therefore should give this shoal area a wide berth.

An IMO-adopted restricted area, the limits of which are shown on the chart, has been established around Plateau de Rochebonne. This area, within a circle of 7 miles radius, is to be avoided by all vessels carrying hydrocarbons.

Les Pertuis

2.21 The area known as Les Pertuis consists of the channels of Pertuis Breton, Pertuis d'Antioche, and Pertuis de Maumusson, and the islands of Ile de Re and Ile d'Oleron, which all lie off the mainland between the parallels of 46°21'N and 45°47'N. The bottom within this area is generally mud, with irregular depths which increase when leading into Pertuis d'Antioche and decrease when leading into Pertuis Breton.

Ile de Re (46°12'N., 1°26'W.), the island which separates Pertuis Breton from Pertuis d'Antioche, is moderately low; its W end is fronted by extensive rocky flats. It is separated at the E end from the mainland by Coureau de la Pallice, which is spanned by a bridge. For further information, see Pertuis Breton in paragraph 2.23.

Pointe des Baleines (46°15'N., 1°34'W.), the NW extremity of Ile de Re, is very low. A main light is shown from a prominent octagonal tower, 57m high, standing on the point. A disused light stands close N of the main light and a coast guard signal station, with a white tower and a radio mast, stands close S of it.

Les Baleineaux, also known as Haut Banc du Nord, lies at the outer end of a drying reef which extends up to 1.5 miles NW of Pointe des Baleines. A light is shown from a prominent tower, 32m high, standing on Les Baleineaux. Several rocky ledges, with depths of less than 3m, lie up to 1.5 miles NW of Les Baleineaux and break in heavy weather. Depths of 10m or less lie up to 6 miles NE of Pointe des Baleines.

In heavy weather, with winds from S through NW, Ile de Re is covered with spray and nearly invisible. In addition, heavy seas usually run over depths of less than 20m in its vicinity.

2.22 Ile d'Oleron (46°00'N., 1°22'W.) is low and has numerous sand dunes covered with pine trees. The highest dunes attain heights of about 28m and stand in the S part of the island. The NE coast of the island forms the S side of Pertuis d'Antioche. A viaduct crosses Coureau d'Oleron which separates the SE coast of the island from the mainland. Pertuis de Maumusson separates Pointe de Gatseau, the S extremity of the island, from the mainland.

Pointe de Chassiron (46°03'N., 1°25'W.), the NW extremity of Ile d'Oleron, is low, sandy, and fringed by reefs and foul ground. A main light is shown from a conspicuous tower, 46m high, standing on this point and a prominent coast guard signal station stands close N of it.

Roche d'Antioche dries 4.3m and lies near the edge of the foul ground which extends up to about 1.5 miles NE of the point. A light is shown from a tower, 27m high, standing on this drying rock.

From Pointe de Chassiron, the W side of the island trends S for 6 miles to Pointe de Chardonniere and then SSE for 11 miles to Pointe de Gatseau. Most of this W shore is fronted by drying rocks which extend up to 1 mile seaward. The belfry of the church at St. Pierre d'Oleron, which resembles a light tower, stands 7.5 miles SE of Pointe de Chassiron and is conspicuous from seaward.

La Cotiniere (45°55'N., 1°20'W.), a small fishing boat harbor, lies on the W coast of the island, 8 miles NW of Pointe de Gatseau. It is entered through a narrow and shallow channel which leads between the shoals fronting the shore and local knowledge is required. Entry is reported to be dangerous during winds or swells from the SW to W.

Caution.—Numerous wrecks, some dangerous, lie up to 10 miles seaward of the W coast of Ile d'Oleron and may best be seen on the chart.

2.23 Pertuis Breton is the channel which lies between the mainland coast, on the N side, and the N shore of Ile de Re, on the S side. It extends into Coureau de la Pallice, a narrow passage, at the head and is mainly used by small vessels, fishing boats, and pleasure craft. Fosse Orientale de Chevarache, a comparatively deep trough, leads through the central part of the channel. A bank lying across the E end of the channel at the N entrance to Coureau has a least charted depth of 2.2m.

The mainland coast extending E of Pointe du Grouin du Cou, previously described in paragraph 2.19, consists of dunes and

marshland. A conspicuous water tower stands 3 miles E of the point, and the town of La Faute, with its prominent church spire, is situated 3 miles farther ESE. A jetty, 160m long, extends seaward from the resort village of La Tranche, 1.7 miles E of Pointe du Grouin. It is used by ferry boats from Saint Martin de Re.

The sea breaks heavily along this stretch of coast in bad weather and the drying flats, which front most of the shore, are dangerous for small craft at such times.

Pointe du Lizay, the N extremity of Ile de Re, is located 2.2 miles NE of Pointe des Baleines and is fringed by rocks.

Ars-en-Re, a yacht harbor, lies at the head of Le Fier d'Ars, a small drying bay entered E of Pointe du Lizay. The shores of the bay are bordered by salt marshes. A narrow and shallow approach channel is indicated by ranges and marked by buoys and beacons.

Pointe de Grouin (Loix), located 4 miles ESE of Pointe du Lizay, is low and fronted by a rocky ledge. La Rocha, a rocky spit, extends about 2.5 miles ENE from this point and is marked by a lighted buoy. Les Islattes, a drying reef, fronts the point and is marked by a beacon.

2.24 St. Martin de Re (46°13'N., 1°22'W.), a small harbor, lies 2.5 miles SE of Pointe de Grouin. It is protected by breakwaters and consists of two tidal basins and a wet dock. A narrow entrance channel, which dries, leads between rocky flats and is indicated by a range. Tides off the entrance rise about 6.1m at springs and 4.7m at neaps. The tidal basins, which dry, are mostly used by fishing boats. The wet dock is entered through a gate, 12m wide, and has depths up to 3.1m; it is mostly used by yachts and pleasure craft.

Vessels may obtain anchorage NE of La Rocha, in depths of 11 to 20m, mud with excellent holding ground. Small vessels can anchor, in depths of 5 to 7m, mud with good holding ground, in the roadstead off the entrance to St. Martin de Re. Local knowledge is recommended for anchoring off and entering St. Martin de Re.

Pointe du Couronneau, located close E of St. Martin de Re, is fronted by a series of rocky ledges. A beacon stands near the outer edge of these ledges, 0.6 mile NE of the point.

La Flotte and Rivedoux Plage, two small drying boat harbors, are situated 1.7 and 4.1 miles SE, respectively, of Pointe du Couronneau. They should only be approached by small craft with local knowledge.

2.25 Anse de l'Aiguillon (46°17'N., 1°10'W.) is entered between Pointe de l'Aiguillon, located 11.6 miles SE of Pointe du Grouin du Cou, and Pointe St. Clement, 3 miles E. The shores of this bay at the head of Pertuis Breton are low, marshy, and encumbered by mussel beds.

A prominent old tower stands on Pointe de l'Aiguillon and a conspicuous power transformer stands on a hill 2.7 miles NW of it.

A shallow channel, which is marked by beacons, leads through the center of the bay to the entrance of the La Sevre Niortaise River.

Marans (46°19'N., 1°05'W.), a small harbor, lies on the La Sevre Niortaise River, 3.5 miles above its mouth. A lock, 104m long and 11m wide, connects the harbor to a canal. Vessels up to 60m in length and 10m beam, with drafts up to 4.4m at

HWS and 3.5m at HWN, can transit the river channel. It is reported (1991) that only small craft with local knowledge enter the harbor which closed to commercial traffic. Pilotage is compulsory for vessels over 40m long; see La Pallice, paragraph 2.28, for further information.

Pont de l'Ile de Re, a conspicuous bridge, spans Coureau de la Pallice between Pointe Sablanceaux, the E extremity of the island, and a point on the mainland, 1 mile N of the port of La Pallice. The bridge has a vertical clearance of 30m and two navigational passages lead under it and are marked by lighted buoys. Vessels pass S between the 10th and 11th piers counting from Pointe Sablanceaux and N between the 13th and 14th piers.

Caution.—Restricted areas lie in the approaches to and exits from the navigational passages beneath the Pont de l'Ile de Re bridge and may best be seen on the chart; anchoring, fishing, and waiting are prohibited within these areas.

A restricted area, the limits of which are shown on the chart, extends between the E end of Ile de Re and the mainland. Due to the existence of submarine cables and pipelines, anchoring, dredging, and trawling are prohibited within this area.

Numerous shellfish farms lie along the shores of Pertuis Breton.

Pertuis d'Antioche, the deepest and principal channel within Les Pertuis, lies between the S shore of Ile de Re and the NE shore of Ile d'Oleron. It extends in a ESE direction and leads to the port of La Pallice.

Lighted Buoy PA (46°06'N., 1°42'W.) is moored 11 miles SW of Pointe des Baleines and marks the outer W approach to Pertuis d'Antioche. A wreck, with a depth of 21m, lies close E of this lighted buoy.

Pointe de Chanchardon, located 4 miles SE of Pointe des Baleines, is the SW extremity of Ile de Re. It is low, sandy, and fronted by a drying rocky ledge extending up to 2.3 miles SSE of it. A light is shown from a tower, 20m high, standing on the outer extremity of the above ledge.

A conspicuous tower stands at Carola, 1.7 miles NW of Pointe de Chanchardon and a prominent water tower is situated 3.7 miles E of the point.

2.26 Pointe de Chauveau (46°09'N., 1°17'W.), the SE extremity of Ile de Re, is fringed by a rocky ledge which dries and extends about 0.8 mile seaward. A light is shown from a prominent tower, 31m high, standing on the S edge of this ledge and beacons are situated close E and 0.5 mile W of it. The roadstead of Rade de la Pallice lies ENE of this point.

Plateau de Chauveau, a rocky bank with depths of less than 9m, extends up to 2 miles S of Pointe de Chauveau and is marked on its S side by a lighted buoy.

Plateau de Lavardin, a rocky bank with depths of 2 to 9m, lies 0.7 mile E of Plateau de Chauveau. Le Lavardin, a drying rock, is located on this bank, 1.3 miles E of Plateau de Chauveau Light. A light is shown from a prominent tower, 21m high, standing on this drying rock. In heavy weather, the sea breaks over the N part of this rocky bank.

Roche du Sud, a shoal with a depth of 5.8m, lies 1.7 miles SSW of Le Lavardin Light and is marked by a lighted buoy moored close W. Rocher d'Amour, a rocky bank with a least depth of 4m, lies about 1 mile SE of Le Lavardin Light.

Le Clone, a rocky bank with a least depth of 17m, lies 2.7 miles SSW of Pointe de Chauveau Light. During strong SW winds, heavy seas form over this bank but do not break.

Fosse d'Antioche, a comparatively deep trench, lies in the central part of Pertuis d'Antioche. A bar extends across the W entrance to this trench and has a least charted depth of 19m.

Pointe des Boulassiers is situated 3.7 miles SE of Pointe de Chassiron, the NW extremity of Ile d'Oleron, which has previously been described in paragraph 2.22. The coast between is fronted by a rocky shelf which dries and extends up to nearly 1 mile offshore. Les Palles, a group of rocks which dry 1.5m, is located 1.7 miles E of Pointe de Chassiron. It lies at the outer edge of the shelf and is marked by a beacon.

Port du Douhet, a small yacht marina which dries, is situated 1 mile SE of Pointe des Boulassiers.

Pointe des Saumonards, located 4 miles ESE of Pointe des Boulassiers, is the NE extremity of Ile d'Oleron. The point is low, tree-covered, and a prominent old fort stands on it.

2.27 Ile d'Aix (46°01'N., 1°10'W.), a small low island, is located 3 miles NE of Pointe des Saumonards. Fort Liedo, a prison, stands on the N side of the island, and being surrounded by trees, is not easily seen. The Citadel, a fort, stands on Pointe Sainte Catherine, the S extremity of the island, and can be identified somewhat more easily. A main light is shown from a prominent structure, consisting of two towers 17m high, standing at the W side of Pointe Sainte Catherine. One tower is used for the main light and the other carries the screen for the red sector. A disused signal station, consisting of a white house with a grey tower, stands 300m NNE of the light structure.

La Longe, the shallower part of which is called Le Boyard, is an extensive sandbank which lies between Ile d'Aix and Pointe des Saumonards. A least depth of 2.2m lies on the N part of Le Boyard, but it dries 1.6m at its S end. A buoy, moored about 2.7 miles NW of Pointe Saumonards, marks the NW end of La Longe, and another buoy, moored 2.1 miles ESE of the same point, marks the SE end of Le Boyard.

Fort Boyard, a large round isolated structure, stands on the NE part of Le Boyard and is marked by a light.

The navigable channels passing NE and SW of Le Boyard are described with the approach to La Charente in paragraph 2.30.

Caution.—A restricted area, the limits of which are shown on the chart, extends across Pertuis d'Antioche to the N of Pointe de Chassiron. Due to the existence of submarine cables, anchoring, dredging, and trawling are prohibited within this area.

La Pallice (La Rochelle-Pallice) (46°10'N., 1°14'W.)

World Port Index No. 37000

2.28 The port of La Pallice is situated on the E side of Coureau de la Pallice, the channel which separates Ile de Re from the mainland. It is the only harbor between La Loire and La Gironde which can accommodate large vessels. The principal approach is through Pertuis d'Antioche but small vessels can approach through Pertuis Breton.

Winds—Weather.—Winds attain the highest frequency from the W nearly year round. Winds from the SW are frequent

in spring, but calms may occur anytime, reaching their greatest occurrence in October. Gales occur frequently in winter, on average 7 days per month. Fog also occurs mostly in winter, but only at a rate of 4 days per month; in summer, fog is almost non-existent.

Temperatures vary from an average of 32°C in summer to -6°C in winter; ice is generally not a problem.

Tides—Currents.—Tides rise about 6m at springs and 4.8m at neaps.

In the entrance to Pertuis d'Antioche, the flood tidal current sets in an E direction and the ebb current sets in a W direction. Both attain a maximum rate of 2 knots. In the S entrance of Coureau de la Pallice, the flood current sets in a N direction and the ebb current sets in a S direction. Both attain a maximum rate of 1.7 knots.

Depths—Limitations.—A long bridge on piles extends W and S for 1,100m from the mainland and terminates in an artificial island known as Mole d'Escale. A passenger facility and a freight rail station stand on this island. In addition, a tanker terminal pier extends 420m S from the S end of the island.

Berths on the E side of the island have dredged depths of 10.5 to 12.5m; berths on the W side have dredged depths of 14.5 to 16m. Tank vessels up to 120,000 dwt, 280m in length, and 16m draft can be handled here, depending upon the tide.

The outer basins of the tidal harbor have berths with dredged depths of 9 to 14.5m and can accommodate vessels up to 100,000 dwt and 12m draft. A new wharf lying S of the outer tidal basin has a berth, 180m long, with a dredged depth of 14m alongside.

The wet dock is 565m long and 201m wide. It has about 1,100m of total quayage and can be entered through a lock, 167m long and 21.3m wide. Vessels up to 165m in length and 21m beam can enter, with drafts up to 9m at HWS and 8m at HWN. The port has facilities for general cargo, bulk, passenger, ro-ro, and tanker vessels.

Aspect.—The landmarks and navigation aids in the approaches to La Pallice are described under Les Pertuis (paragraph 2.21), Pertuis Breton (paragraph 2.23), and Pertuis d'Antioche (paragraph 2.25).

A directional light and a range, which may best be seen on the chart, indicate the approach through the S part of Coureau de la Pallice to the harbor entrance. Prominent warehouses and a tower stand on Mole d'Escale.

An aeronautical lighted beacon and an aeronautical radio-beacon are situated about 1.5 miles NE and 5.5 miles ENE, respectively, of the port.

Pilotage.—Pilotage is compulsory for vessels 55m and over in length proceeding to La Pallice (La Rochelle-Pallice), La Rochelle-Ville, and La Charente; vessels under 55m in length proceeding to La Pallice need not obtain a pilot providing they can communicate with the port authority via port radio.

Vessels should send an ETA message to the pilot station at least 12 hours in advance and confirm any amendments of more than 1 hour at least 4 hours in advance. This message should include the name of the vessel, call sign, ETA, length, draft, and whether the vessel is equipped with a working bow thruster.

Pilots generally board within 1 mile of Plateau de Chauveau Lighted Buoy, moored 1.5 miles S of Plateau de Chauveau

Light. Vessels should contact the pilot by VHF 2 hours before arriving at the boarding place.

Pilots for La Charente board in the waiting anchorage area 2 miles S of Plateau de Chauveau Lighted Buoy. Vessels requiring a pilot for La Charente must alert the pilot when they anchor.

Regulations.—A Mandatory Access Channel, the limits of which are shown on the chart, leads through Pertuis d'Antioche to a Waiting Area situated NW of Ile d'Aix. All vessels over 1,600 grt and carrying hydrocarbons or dangerous cargo must report their entry into this channel or the waiting area and maintain a listening watch on VHF channel 16.

All other vessels intending to use the access channel should first establish a listening watch on VHF channel 16.

Vessels less than 20m in length, ferries, fishing boats, and yachts shall keep out of the way of large vessels navigating the approach channels.

Anchorage.—Vessels can anchor, in depths of 11 to 15m, mud with good holding ground, in the designated Waiting Area lying NW of Ile d'Aix. However, this anchorage is not sheltered from W winds.

Vessels can also anchor, in depths of 10 to 13m, mud, in Rade de la Pallice. This anchorage is well-sheltered, but may be congested and caution is necessary to avoid the obstructions, shoals, and wrecks in the vicinity. It is entered from Pertuis d'Antioche via a comparatively deep channel which leads between Plateau de Chauveau and Plateau du Lavardin.

Caution.—A dumping ground area, the limits of which are shown on the chart, lies in the vicinity of Le Lavardin Light. A danger area, marked by a buoy, lies within the limits of this dumping ground area.

Numerous wrecks, some dangerous, lie in the approaches to the port and may be best seen on the chart.

Development and construction are being carried out in the S part of the port.

Vessels without local knowledge, which are not obliged to take on a pilot, are still advised to do so.

2.29 La Rochelle-Ville (46°09'N., 1°09'W.) (World Port Index No. 37010), the old port, is situated on the S side of the city at the head of an inlet. It is one of the largest coastal and deep-sea fishing ports in France and is equipped to process fish in considerable amounts. It is also a major yachting center.

Tides—Currents.—Tides rise about 6.1m at springs and 4.9m at neaps.

Depths—Limitations.—The entrance fairway has a least depth of 0.2m and narrows to a width of 35m at the inner end. It leads over Plateau du Lavardin and passes between Rocher d'Amour and Le Lavardin.

The main harbor comprises of a tidal basin, an outer wet basin, and inner wet basin. In addition, an extensive yacht marina is situated on the S side of the harbor entrance.

The tidal basin has an entrance 25m wide. It dries in places and is used by yachts and pleasure craft. The inner wet dock has an entrance 10.2m wide. It is maintained at a depth of 3m and is used mostly by yachts and pleasure craft up to 35m in length and 9m beam.

The outer wet dock has an entrance 16.3m wide. It is maintained at a depth of 4.3m and mostly used by fishing vessels up to 100m in length and 14m beam.

Aspect.—A lighted range indicates the entrance fairway which leads ENE from Coureau de la Pallice. Its inner part is also marked by buoys. A light is shown from Tour Richelieu, a conspicuous red tower 17m high, which stands on the N side of the approach fairway.

Tour St. Nicolas and Tour de la Chaine, both large and prominent fortress towers, stand on the E and W sides, respectively, of the entrance to the tidal basin. Tour de la Lanterne, a large round tower with a spire, stands on the N side of the harbor entrance close W of Tour de la Chaine.

In the city, the belfry of the cathedral and the spire of a church are situated 0.3 mile N and 0.5 mile NE, respectively, of Tour St. Nicolas and are conspicuous.

Caution.—A danger firing area, the limits of which are shown on the chart, lies close S of the approach channel.

It is recommended to stay exactly on the alignments of the entrance fairway ranges as the channel is narrow and the bottom consists of hard sand which can cause severe damage.

Note.—It was reported (1991) that the port was no longer open to commercial shipping traffic.

2.30 La Charente, a river, is approached at the head of Pertuis d'Antioche, with Ile d'Aix, on the N side, and the SE coast of Ile d'Oleron, on the S side. The outer approach is encumbered by La Longe and Le Boyard, which have been previously described in paragraph 2.27.

Pointe Arceau is located on the SE side of Ile d'Oleron, 3 miles S of Pointe des Saumonards. The shore between lies below the level of HW and is drained by numerous canals. Boyardville (La Perroutine), a yacht marina, is situated 1.2 miles S of Pointe des Saumonards and is sheltered by a mole, marked by a light.

Passage de l'Est, leading between Ile d'Aix and La Longe, forms a clear channel from Pertuis d'Antioche to the roadstead of Rade de l'Ile Aix. Both sides of this passage are steep-to and caution is necessary in the vicinity of Le Boyard, as the ebb tidal current sets WNW at a rate of up to 1.4 knots.

Rade de l'Ile d'Aix (46°00'N., 1°12'W.) lies between Ile d'Aix, previously described in paragraph 2.27, and Le Boyard. It provides good anchorage, in depths of 10 to 15m, mud, and is well-sheltered, except from fresh NW winds. These may raise a choppy sea which is dangerous to small boats.

Rade de Trousses (45°58'N., 1°13'W.), a roadstead lying 2 miles SE of Pointe des Saumonards, provides good anchorage, in depths of 9 to 11m, mud. It is sheltered from all but NW winds and can be reached through Passage de l'Ouest which leads W of Le Boyard. Several obstructions are reported (1993) to lie within a small area at the NW side of this channel.

2.31 La Charente is about 200 miles long; the small ports of Rochefort and Tonnay-Charente are located 10 and 13.5 miles, respectively, above its mouth. The river is entered through a channel which leads ESE and SE from Rade de l'Ile d'Aix and is restricted by a bar of very soft mud with a depth of 0.5m. The bottom is nearly fluid and vessels with drafts up to 1.2m more than the height of the tide can usually pass through it. The bottom of the river is formed of harder mud and the depths in the fairway are stable.

Two large conspicuous dish-shaped radar antennae, 37m high, stand at Soubise, a naval air station situated on the N bank of the river, 6 miles above the mouth.

Several bridges and power cables span the river; they have a minimum vertical clearance of 26m.

The river entrance fairway is indicated by a lighted range; within the river, range beacons, consisting of posts surmounted with discs, mark the reaches of the channel up to Rochefort. Vessels are restricted to a speed of 12 knots in the river.

Tides—Currents.—Tides in the river entrance rise about 6.3m at springs and 5m at neaps.

In the confined areas of the river, the tidal currents attain a rate of 4 knots at springs; elsewhere, they attain a rate of 2 knots. In the vicinity of the river bends, the tidal currents sometimes set across the channel and caution is advised.

2.32 Rochefort (45°56'N., 0°58'W.) (World Port Index No. 37040), a small port, is situated on the W bank of the river, 10 miles above the entrance. It is a transshipment area for the upper reaches of the river.

The main harbor facilities consist of two wet dock basins, one of which is only used by yachts and pleasure craft. The wet dock basin used by commercial shipping is entered through a lock 104m long and 18m wide. It has 1,125m of total quayage and is generally maintained at a depth of 6.4m, but silting is a problem. Vessels up to 115m in length and 16m beam can transit the lock at HW and can enter with drafts up to 6m at springs.

Tonnay-Charente (45°56'N., 00°53'W.) (World Port Index No. 37050), a small port, is situated on the N bank of the river, 3.5 miles above Rochefort.

The harbor consists of main riverside berth, 200m long, with depths of 5.5 to 7.3m alongside, depending upon the tide. In addition, there are three berths, each 60m long, and a private berth, 75m long. Generally, vessels are limited to a length of 115m due to the difficulty of maneuvering in the narrow river channel. Vessels with the maximum length are usually limited to a draft of 5.5m, but coasters and small vessels can be handled with drafts up to 6.3m at HWS and 5.3m at HWN.

2.33 Pertuis de Maumusson (45°48'N., 1°15'W.) separates Pointe de Gatseau, the S extremity of Ile d'Oleron, from Pointe d'Arvert (Pointe Espagnole), located on the mainland. The channel is entered between Banc de Gatseau and Banc des Mattes which extend seaward up to 1.5 miles from the above points. It is about 0.3 mile wide and leads over a sand bar with a usual low water depth of 1.5m. Local knowledge is required as this bar shifts continually and the depths vary. It is reported that local boatmen will act as unofficial pilots.

The approach is marked by a lighted buoy, moored about 2.4 miles W of Pointe d'Arvert. The channel is marked by beacons and buoys which are moved as necessary to conform to the changes in the sandbanks. The ocean swell, which rolls directly onto the banks, forms a large area of breakers and renders the channel and seaward approach dangerous in bad weather, especially during the outgoing tidal currents. During fresh W winds, the most favorable time to cross the bar is during the hour immediately before HW.

A lookout tower, consisting of a pylon surmounted by a T-shaped topmark, stands at Gardour, 1.5 miles SE of Pointe d'Arvert. It is situated on a sand hill, with an elevation of 77m, and can be seen from the offing.

Tides—Currents.—The incoming tidal current may be felt some distance to seaward; however, the outgoing current, which runs strongly and attains a rate of 3.7 knots at springs, turns N just outside the entrance and decreases in strength. Off the bar, the flood current runs ESE and the ebb current runs WNW; they attain rates at springs up to 2.8 and 3.3 knots, respectively.

Caution.—Several dangerous wrecks lie in the seaward approaches to Pertuis de Maumusson and may best be seen on the chart.

2.34 Coureau d'Oleron (45°51'N., 1°11'W.), a tortuous channel, connects Pertuis d'Antioche with Pertuis de Maumusson. It leads through an extensive area of sand banks, drying mud flats, and rocky shoals which front both the mainland and the E side of Ile d'Oleron. The fairway has a least known depth of 0.3m and vessels should not attempt to navigate it without local knowledge. It is reported that local boatmen will act as official pilots.

Viaduc d'Oleron spans Coureau d'Oleron and connects the island to the mainland, about 4 miles within the entrance of Pertuis de Maumusson. This bridge has a vertical clearance of 15.1m over a width of 60m where it spans the fairway.

The channel leads from the inner end of Pertuis de Maumusson between Banc Trompe Sot and Banc Bourgeois. It then trends N and passes between Rocher d'Ade and Fort du Chapus and then NE between Banc d'Agnas and Rocher de Daire. From the latter, it rounds Banc Lamouroux to the E and enters the S part of Pertuis d'Antioche. The fairway is marked by buoys and beacons, but is encumbered by unstable shoals.

Le Chateau d'Oleron (45°53'N., 1°11'W.), a small harbor, lies on the W side of Coureau d'Oleron. The outer harbor basin dries 1.5m and is entered through an entrance, 10m wide. It is mostly used by fishing craft which work the local oyster beds.

La Seudre (45°48'N., 1°09'W.), a river encumbered by extensive tidal flats, flows into the S part of Coureau d'Oleron. It is navigable by small craft as far as the lock at Riberou, 12.5 miles above the entrance. There are also several small marinas along the banks. A bridge and a power cable, with minimum vertical clearances of 18m, span the river channel. The fairway is marked by buoys and beacons and has a least depth of 0.5m over the entrance bar. Vessels should not attempt to enter the river without local knowledge. Anchorage can be obtained in depths of 5 to 8m, mud, in mid-stream from abreast Pointe Mus de Loup, at the S side of the river entrance, to Canal de la Tremblade, 1 mile SE. Canal de Marennes is entered on the N side of the river, 0.7 mile ESE of Pointe Mus de Loup. It dries 2.1m and leads 2 miles to a lock, 8m wide, and a small basin at Marennes which are used by boats and small craft.

2.35 Pointe de la Coubre (45°42'N., 1°14'W.), low and sandy, is located 6 miles S of the entrance to Pertuis de Maumusson. The coast between is backed by the forest of La Coubre. From seaward, the high and conspicuous spire of the church at Marennes, 6 miles ENE of Pointe d'Arvert, may be seen behind the trees. In addition, a prominent television mast,

104m high, stands at Dunes de la Brisquette, which form two distinct peaks, 2 miles NE of Pointe de la Coubre.

A spit extends SSE for about 2 miles from Pointe de la Coubre. A main light is shown from a conspicuous tower, 65m high, standing on the point. A prominent signal station, 42m high, stands 0.3 mile ENE of the light tower; a disused signal

station stands close S of it. Two stranded wrecks, marked by a buoy, are reported to lie on the edge of the coastal bank, 2.5 miles W of the point.

Caution.—Several wrecks, some dangerous, lie up to 6 miles offshore between the entrance to Pertuis de Maumusson and Pointe de la Coubre; they may best be seen on the chart.